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ATTACHMENT

Work Assignment Title: Estimating Emissions from O&G

Contract #: EP-D-11-006

Contractor: ERG WA#: 4-06 WA Change #: 2

WAM: Jennifer Snyder

Add the following under Task 7:

A redesign of the tool in preparation for the 2014 NEI shall include dividing the tool into 2 modules - one for exploration (drilling, fracturing, well completions, mud degassing) and one for production. This is necessary due to size limitations of Microsoft Access, and will allow for potential future revisions to the tool, including calculating unconventional wells/production separately from conventional wells/production. All gas composition data shall also be consolidated, removing it from all the individual tables and creating a single, master table for composition data. A gas composition table shall be included in each of the exploration and production modules.

Based on comments, the contractor shall design and format user-friendly data input forms. These forms shall be based on the models ERG shared with the National Oil and Gas Committee in July, 2014.

This additional task shall be implemented by March 31, 2015 in order to be reflected in the training at the Emission Inventory (EI) Conference. The Contractor shall conduct training at the EI Conference in April, 2015 (the next option period). The Contractor shall prepare the training materials under this WA.

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Statement of Work

1. Title: Estimating Emissions from the Oil and Gas Production Sector, Continued

Contractor Name: Eastern Research Group

Contract #: EP-D-11-006

WAM: Roy Huntley, 919-541-1060

Alt. WAM: Jennifer Snyder 919-541-3003

II. Background:

The Emission Inventory and Analysis Group (EIAG) produce the National Emission Inventory (NEI) for criteria and hazardous air pollutants (HAPs) for various years. These data are needed by States to evaluate emissions trends in each State and to compare emission trends between States. The NEI is also used as a basis for various EPA modeling and regulatory analyses. Finally, the NEI contains the data used to produce the National Air Pollutant Emission Trends report.

The purpose of this work assignment is to continue the development of a calculational tool that estimates nonpoint emissions for the oil and gas production sector for the calendar year 2011, and will be flexible enough to update with new activity and inputs for future calendar year inventories. (The term "nonpoint" is used to include what has been traditionally called "area" sources in the criteria inventories. For HAPs, "area sources" has a statutory meaning related to how a source is regulated. Therefore, we use the term "nonpoint" to include stationary sources that do not have a known latitude/longitude location).

III. Description and Tasks:

Task 1: Work Plan

The Contractor shall develop a work plan and cost estimate. The cost estimate shall be at least broken out to the task level. The Contractor shall hold conference calls with the WAM on at least a biweekly basis after approval of the work plan to plan and review progress of this WA. This is a follow-on work assignment. The previous WA is 3-03 contract EP-D-11-006. This WA does not duplicate any work previously performed or currently being performed.

Task 2: Complete 2011 Version 2 of the Oil and Gas Production Emission Estimation Tool

The Contractor shall continue working to complete the 2011 version 2 of the tool. This is a continuation of the work done by a previous WA (WA 3-03, contract EP-D-11-006). The Contractor shall continue incorporating comments on the tool as advised through Technical Direction (TD) by the WAM. The Contractor shall refine the tool as necessary and incorporate changes as advised through TD by the WAM. After addressing comments, the Contractor shall deliver to the WAM a final version 2 of the tool to be used for the 2011 NEI by April 30, 2014.

Task 3: Review New Data

The Contractor shall review new data involving emission factors and practices related to oil and gas production activities for the purpose of improving the tool's emission estimates. This new data shall include but not be limited to data submitted to EPA by industry under the Subpart W Greenhouse Gas Reporting Program (GHGRP) Rule, data released in the latest Environmental Defense Fund (September 2013) study, data from Regional Planning Organizations (like WRAP and MARAMA), states, and other federal agencies (like the Bureau of Land Management (BLM). The Contractor shall coordinate with the WAM to obtain data from any of these sources. This data shall be incorporated as appropriate into the oil and gas production emission estimation tool. All changes to the tool shall be approved by the WAM before being implemented.

Task 4: Response to Comments

The Contractor shall review and provide responses, if appropriate, for all comments that resulted from the public review of the oil and gas tool, which was released in September 2013. The comment period ended January 31, 2014, and comments were received from the American Petroleum Institute (API). The Contractor shall provide a final memo to the WAM responding to the comments. Where appropriate, the contractor responses shall include recommendations for revisions. All changes to the tool or to the documentation as a result of this review shall be approved by the WAM.

Task 5: Changes to the Oil and Gas Tool (post v2)

The Contractor shall redesign the tool as appropriate and as necessary, taking into account the changes needed as a result of the public comments and National Oil and Gas Committee comments. All redesigns shall be approved in advance by the WAM through TD. For planning purposes, the Contractor shall assume a redesign of the liquids unloading methodology to match the OAP methodology. Also for planning purposes, the Contractor shall assume a redesign of the dehydrator methodology, taking into account comments that these emissions are non-linear with production. This task shall include revising the tool by providing a more user-friendly interface for states' submissions. The purpose of this is to make changes to the basin emission factors easier to upload, and to make it easier to see exactly what basin factors are available for their areas.

Task 6: Filling Data Gaps

The Contractor shall design and implement a plan to fill in data gaps for the states that have not to date given us detailed state-specific information. The contractor shall submit the plan to the WAM for approval through TD before implementation. For example, Ohio has stated that they do not have dehydrators. The Contractor shall design and implement a strategy to determine how dehydrators are actually used in Ohio. The strategy might include contacting several facilities in Ohio or calling the state energy office for information. In addition, the Contractor shall work with the states that do not rely on the EPA tool for emission estimates to incorporate their state/basin specific inputs into the EPA tool. For example, Wyoming, Colorado, and Pennsylvania have their own estimates for oil and gas production, and submitted these to the

2011 NEI. The Contractor shall work with these states to revise the tool inputs so that the tool's emission estimates match the states estimates. For planning purposes, the Contractor shall assume 5 states have needs for filling data gaps.

Task 7: 2014 NEI Development

The Contractor shall do the necessary data pulls and data manipulation to the HPDI dataset to prepare the data for import into the EPA tool in preparation for a preliminary 2014 emission inventory. For cost estimation purposes, the contractor shall assume the 2014 data will be similar in format to the 2011 data.

IV. QA Requirements:

The Contractor shall provide a written QA project plan as part of the WA. The Contractor shall also evaluate the nonpoint estimates in terms of reasonableness. The Contractor shall propose other reasonableness checks for WA approval. Reasonableness checks may include review of outliers, comparing 2011 estimates to previous year's estimates or to other comparable estimates. The Contractor shall deliver QA reports to the WAM.

V. Deliverables:

The Contractor shall adhere to the following schedule:

Deliverable	Due Date
Work Plan	20 calendar days after the effective date of the work assignment
Monthly progress reports	Ongoing
Deliver final v2 of the Tool	April 30, 2014
Deliver final documentation	April 30, 2014
Deliver memo detailing new recommended emission factors (task 3)	March 31, 2015
Deliver final response to API comments	May 31, 2014
Deliver final post 2011 V2 version of the tool	March 31, 2015
Deliver draft plan to improve state data gaps (task 6)	June 31, 2014
Deliver the 2014 preliminary emissions	March 31 2015
Peliver the 2014 preliminary emissions	March 31 2015

VI. Reporting Requirements:

The Contractor shall provide monthly progress reports in accordance with the terms of the contract. The Contractor shall submit work products in electronic as well as hard copy form. In addition, the Contractor shall deliver to the WAM each draft and final report in electronic format that is readable by Windows-based word processing (Microsoft Word 2007), graphics (Microsoft PowerPoint 2007), spreadsheet (Excel 2007), and database (Access 2007) programs. The Contractor shall also provide electronic copies of reports in PDF format.